SHPI.zero AC power supply

Mains input, flyback converter, 5 V output

AC 100–240 V –> fuse, varistor, bridge rectifier, pi filter, UCC28704 flyback, 5 V output

35 components

Datei: sheets/01_Netzteil.kicad_sch

Relay, buzzer, current measurement, connector

Three 5 V relays on L, buzzer, ACS720 in the load current path of K2, 12-pin connection to the SHPI.zero

29 components

Datei: sheets/02_Relais_Strommessung.kicad_sch

SHPI.zero AC power supply | Functional schematic

SHPI

Sheet: /
File: SHPI-zero-AC.kicad_sch

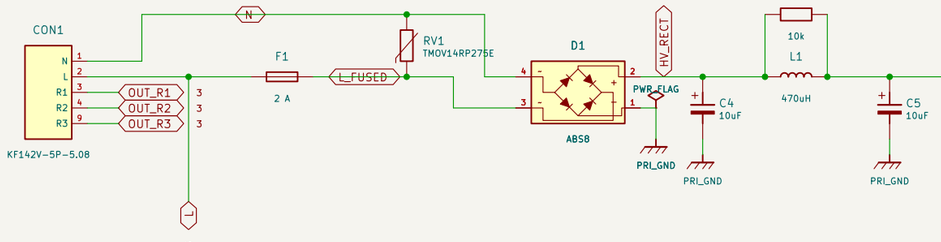
Title: SHPI.zero AC power supply / Overview

Size: A3	Date: 2026-11-10	**Rev: v2.4**
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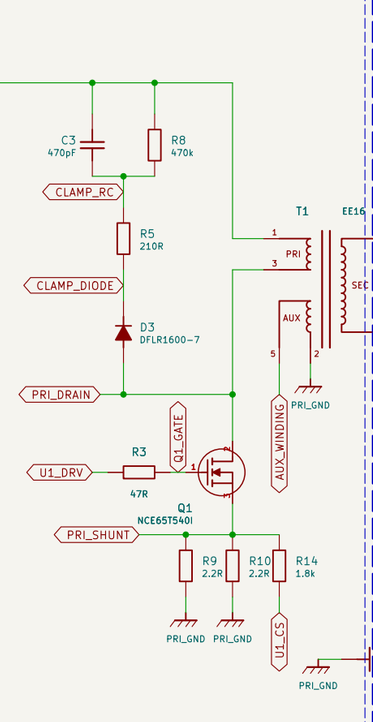
Mains input, flyback converter, 5 V output

All components to the left of the isolation boundary are at mains potential (PRI_GND is NOT protective earth/ground).

AC input / protection / rectification / pi filter

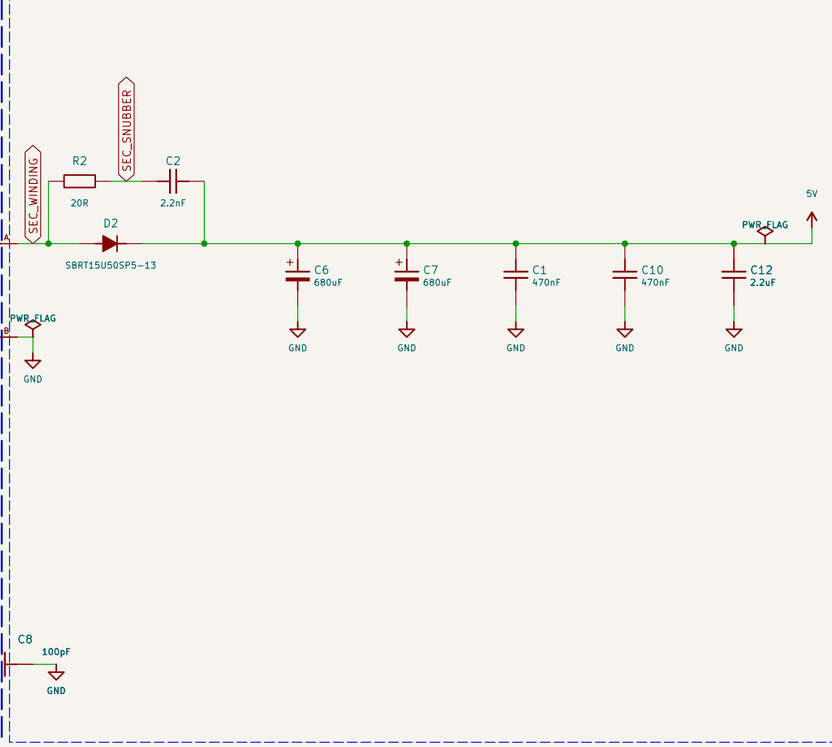


Flyback primary side

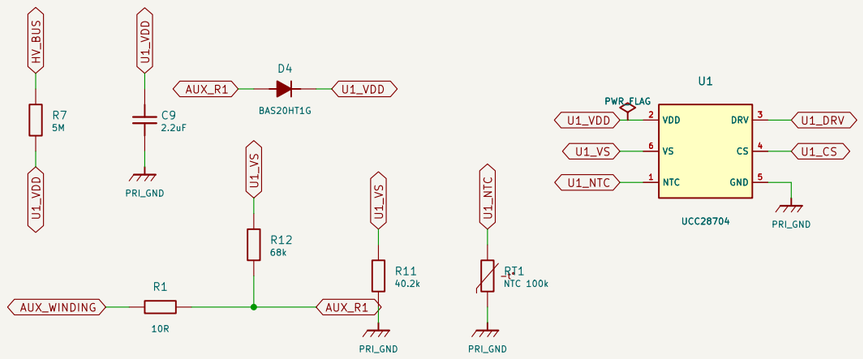


Secondary side 5 V

ISOLATION BARRIER



UCC28704 primary-side regulation (PSR), startup, auxiliary winding

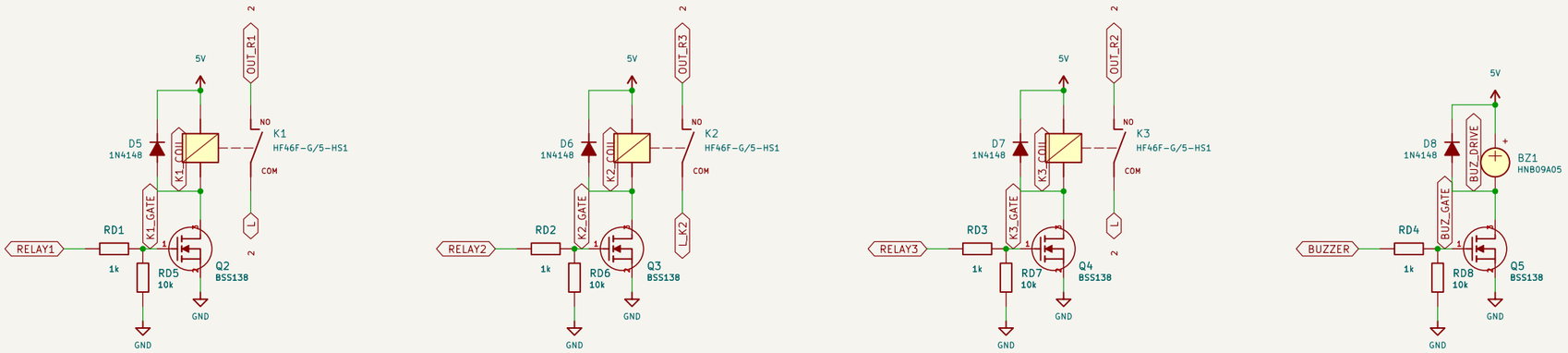


SHPI.zero AC power supply | Functional schematic		
SHPI		
Sheet: /Mains input, flyback converter, 5 V output/		
File: 01_Netzteil.kicad_sch		
Title: SHPI.zero AC power supply / Mains input, flyback converter, 5 V output		
Size: A3	Date: 2026-11-10	**Rev: v2.4**
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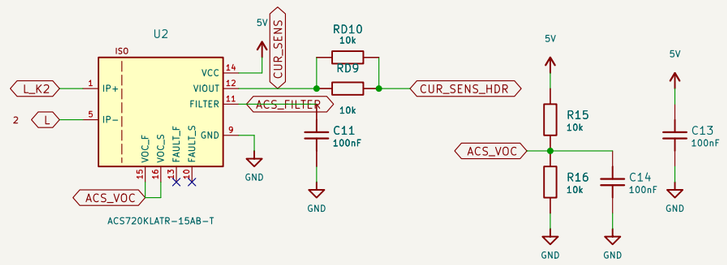
Relay, buzzer, current measurement, connector

The relay contacts are at mains potential L and are not potential-free.

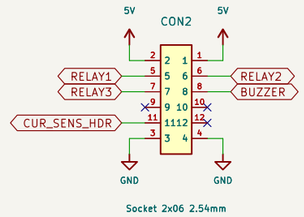
Relay and buzzer drivers (BSS138, freewheeling diodes)



ACS720 current measurement (load current K2 / terminal R3), reinforced isolation



Connector to the SHPI.zero (2x6 pin header)



Socket 2x06 2.54mm

SHPI.zero AC power supply | Functional schematic

SHPI

Sheet: /Relay, buzzer, current measurement, connector/
File: 02_Relais_Strommessung.kicad_sch

Title: SHPI.zero AC power supply / Relay, buzzer, current measurement, conn

Size: A3	Date: 2026-11-10	**Rev: v2.4**
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